



DEPARTMENT OF HEALTH & HUMAN SERVICES

EPA Region 5 Records Ctr.



226135

Public Health Service

Agency for Toxic Substances
and Disease Registry
Atlanta GA 30333

April 14, 2000

Ms. Vernita Simon
On-Scene Coordinator
US Environmental Protection Agency
Mail Stop SE-5J
77 West Jackson Boulevard
Chicago, Illinois 60604

Dear Ms. Simon:

The Agency for Toxic Substances and Disease Registry (ATSDR) has prepared a health consultation to address your concerns regarding the proposed procedures to measure radiation exposure at the Lindsay Light II RV 3 Site, North Columbus Drive. The document is attached to this letter.

Our findings indicate that the proposed practice of using a technician's body as a radiation shield does not meet the Federal regulations pertaining to the concept of ALARA (As Low As Reasonably Achievable) nor the recommendations of the International Commission on Radiological Protection as this procedure does not provide any benefit to the technician who is being used as the radiation shield.

If you require any additional assistance from ATSDR, please contact me directly at (404) 639-6004 or our Regional Representative in our Chicago office, Ms. Louise Fabinski at (312) 886 - 0840.

Sincerely Yours,

Paul A. Charp, Ph.D.
Senior Health Physicist

Enclosure

cc:
Louise Fabinski, ATSDR Region V

Public Health Consultation for the Lindsay Light II RV-3 Site, North Columbus Drive, Chicago, Illinois

Background

The Agency for Toxic Substances and Disease Registry (ATSDR) received a request from the US Environmental Protection Agency Region V (EPA) office in Chicago to review a modified soil sampling plan for the Lindsay Light II RV 3 North Columbus Site in Chicago, Illinois. This site is contaminated with radiological material apparently consisting of Radium 226 and Thorium 232 ores. Because of the nature and apparent extent of contamination, efforts to adequately survey the radiation exposure and radiation dose have been hampered by an exposed wall of contaminated material. This wall, therefore, is contributing to the measured radiation field hampering the field sampling efforts.

Discussion

In documentation ATSDR received from EPA, the contractor is proposing to modify their field screening method so that “the technician taking the reading should place his or her body between the area anticipated to be the source of the “shine” as additional shielding.” ATSDR has reviewed this protocol and has determined that the protocol is unacceptable as it violates the regulatory practice of As Low As Reasonably Achievable (ALARA). ALARA means making every reasonable effort to maintain exposures to radiation as far below the dose limits as is practical consistent with the purpose for which the activity is undertaken, taking into account the state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations and in relation to utilization of nuclear energy and licensed materials in the public interest (Title 10, Code of Federal Regulations, section 20.1003).

Furthermore, the International Commission on Radiological Protection (ICRP) has stated that no activity that may result in exposure to radiation should be performed unless there is “sufficient benefit to the exposed individuals...” (ICRP Report 60, paragraph 112).

Conclusions and Recommendations

Based on a review Federal regulations as well as recommendations from international organizations, ATSDR believes this proposed procedure is not in the interest of technicians who use their body as a shield, this procedure should not be performed.

As an alternative, shielding materials such as lead sheets or steel plate should be used to reduce the “shine” during the radiation exposure measurements. This would meet the requirements of both ALARA as well as the recommendations of the ICRP.